Jan 22, 2004

Global Hawk ETP Flight Flowing Overview

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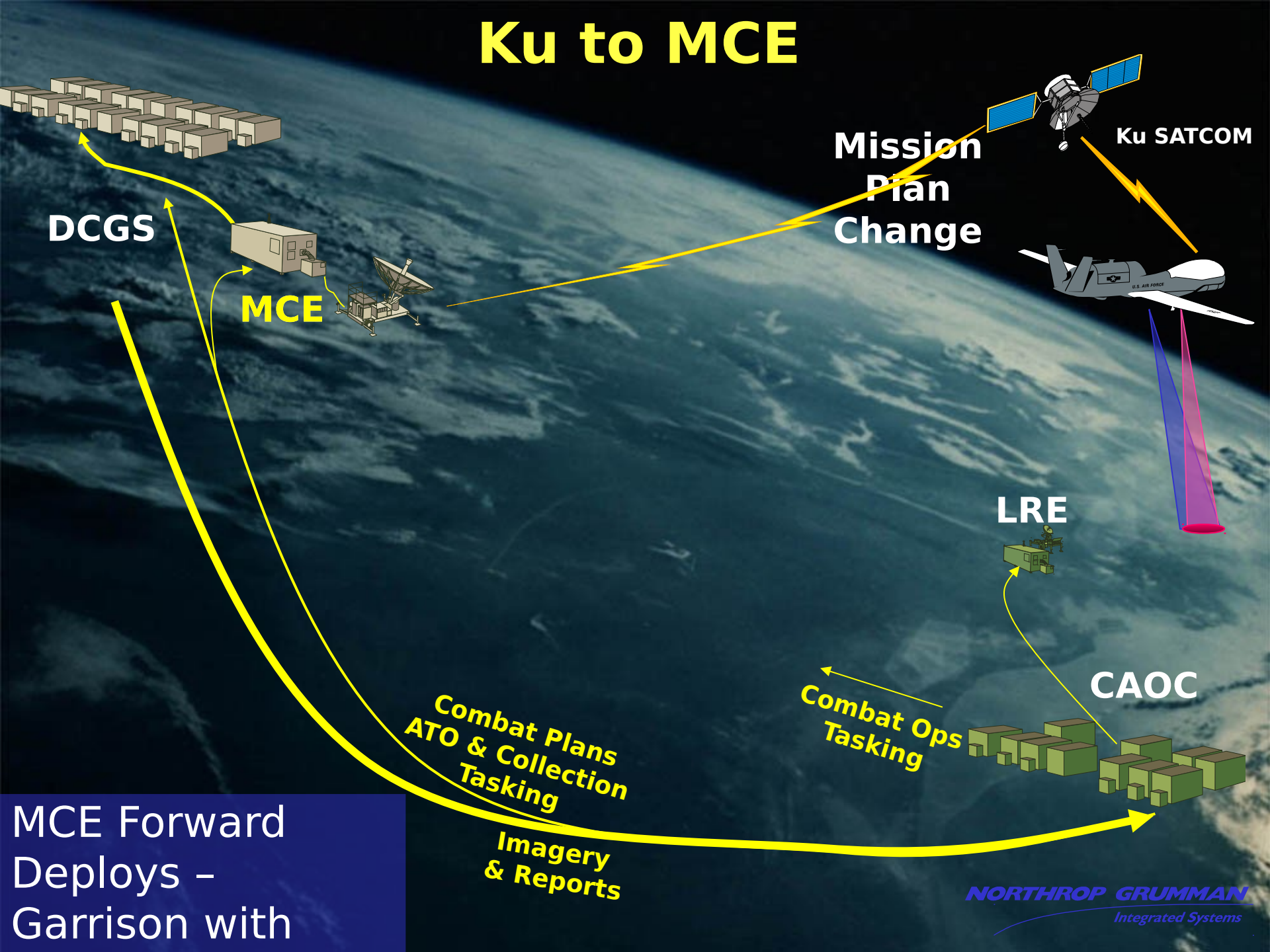
- **ETP Flight Following**
  - **Collaboration/Situation Awareness Through External Interface Definitions is in the Early Stages of Requirements Definition/Analysis**
  - **Focus Should be on Interface Standards**

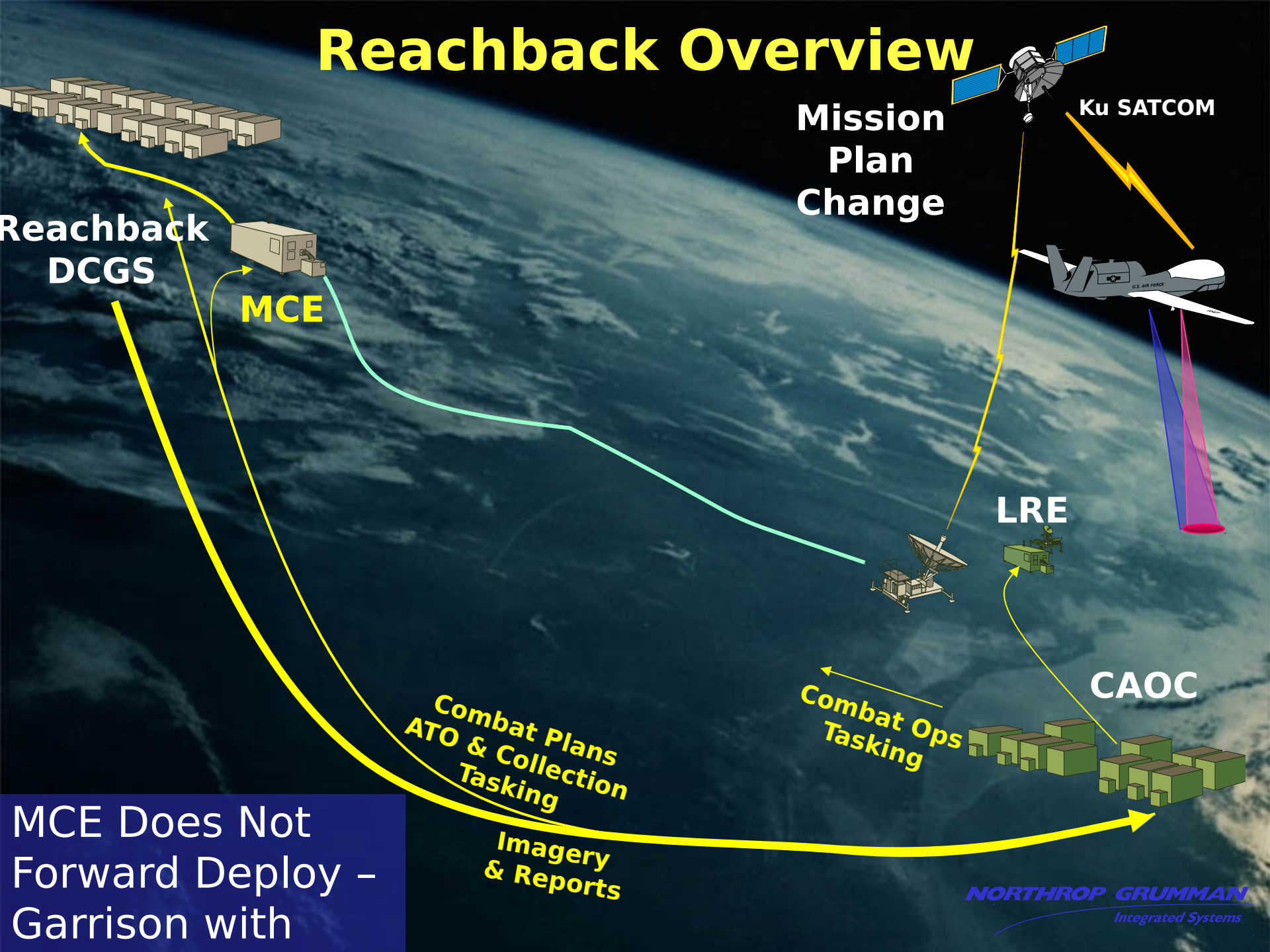
Ku to MCE



MCE Forward Deploys – Garrison with

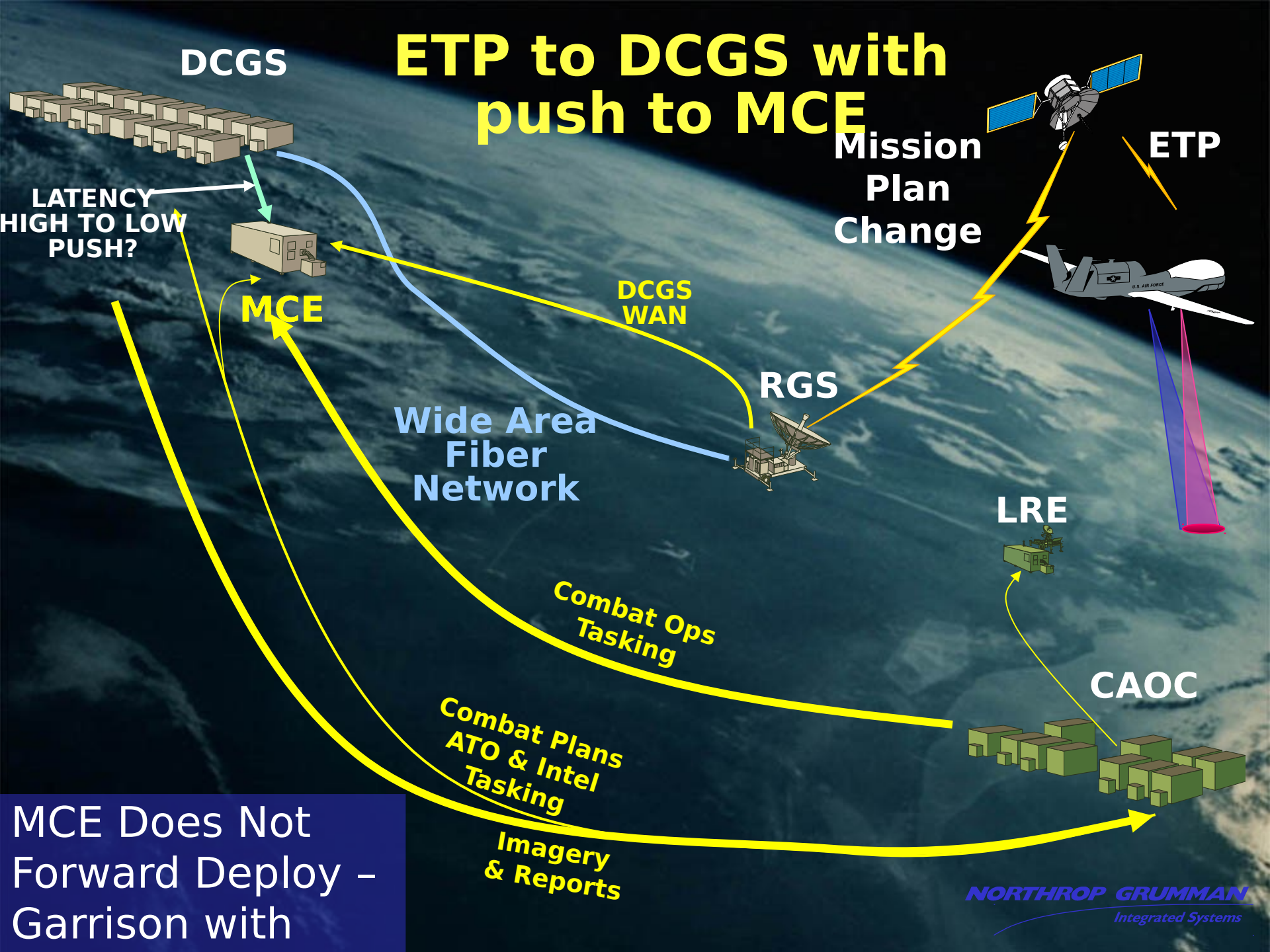
NORTHROP GRUMMAN
Integrated Systems

Reachback Overview



MCE Does Not Forward Deploy – Garrison with

NORTHROP GRUMMAN
Integrated Systems


ETP to DCGS with push to MCE
DCGS
LATENCY HIGH TO LOW PUSH?
MCE
DCGS WAN
Mission Plan Change
ETP
RGS
Wide Area Fiber Network
LRE
Combat Ops Tasking
CAOC
Combat Plans ATO & Intel Tasking
Imagery & Reports
MCE Does Not Forward Deploy – Garrison with
NORTHROP GRUMMAN
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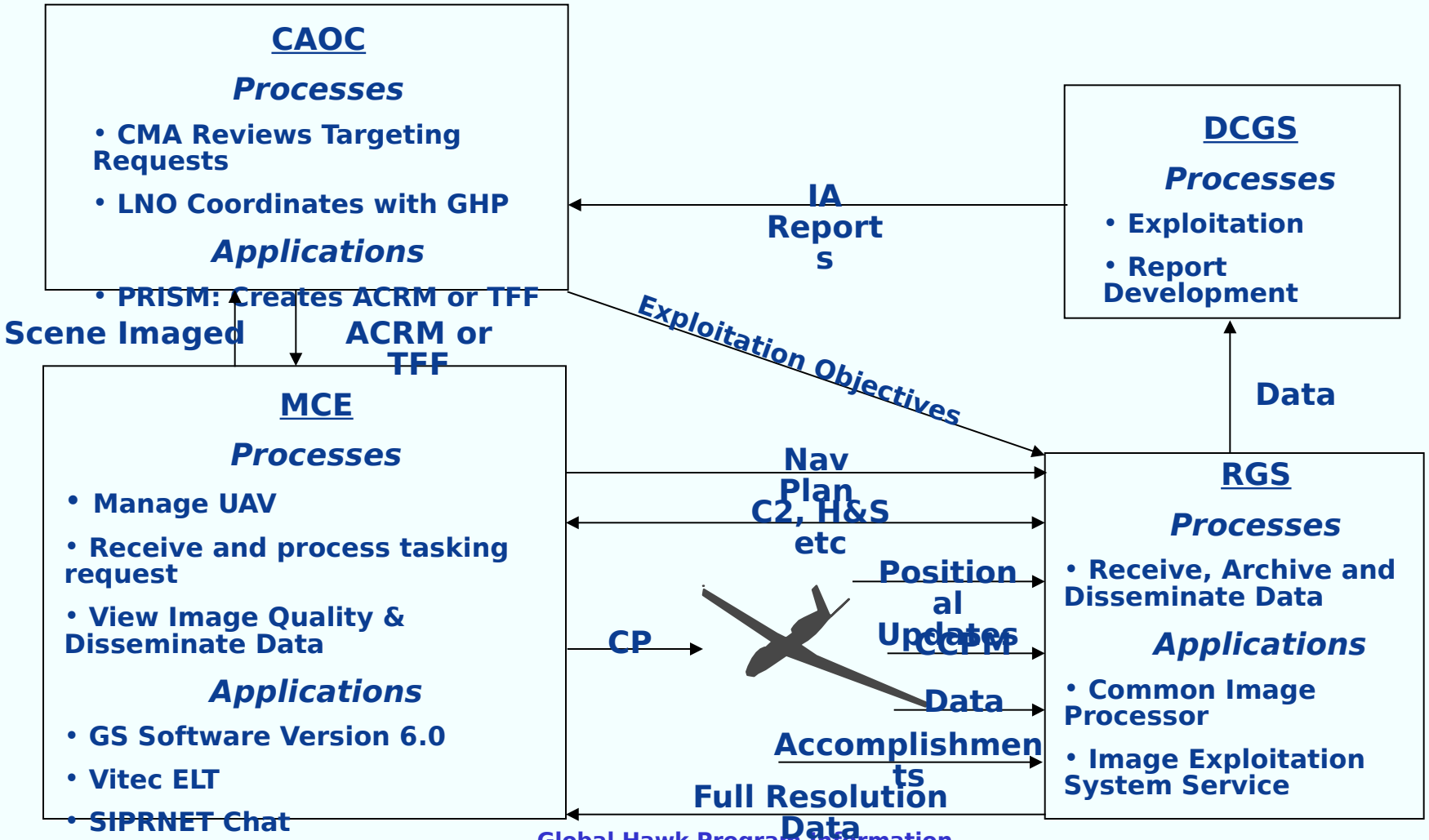
ISR Data Flows – During a Mission



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Common Collection Plan Message (CCPM)

Field Name	Type	Size	Range	M, C or O	Remarks
MISSION REC					(START)
Project_Code	Alphanumeric	2		M	DIA assigned codes
Take_Off_Time	Numeric	12		M	Launch time of platform in GMT. YYMMDDhhmmss where Y = Year, M = Month, D = Day, h = Hour, m = Minute, s = Second
Program Code	Alphanumeric	2		M	Theater Code(digit) followed by Program Name(alpha)
Sortie	Alphanumeric	2		M	Sortie of the month
Message_Sequence_#	Numeric	3	001-999	M	If Message_Sequence_Number = 001, It is a complete Collection Plan. If Message_Sequence_Number > 001 It is a delta Collection Plan relative to the last Collection Plan.
Sensor_ID	Alphanumeric	6		M	SENSOR_ID field in ACFTB TRE
MISSION REC					(END)
SCENE COUNT REC					(START)
Scene_Count	Numeric	5	00001-99999	M	Number of Scenes
SCENE COUNT REC					(END)
SCENE REC					(Start) Occurs Scene_Count times
Sensor_Mode	Numeric	3	001-999	M	MPLAN field in ACFTB TRE
Scene_Number	Numeric	5	00001-99999	M	Scene Number
Scene_Priority	Numeric	3	000-999	O	Scene Collection Priority

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Common Collection Plan Message (CCPM)

Scene_Trans_Code	Character	1	Blank, A, C, D	M	If Message_Sequence_Number =001: Blank If Message_Sequence_Number >001: A =Add C =Change D =Delete
Scene_NIIRS	Numeric	3	0.0 – 9.0	O	Required minimum NIIRS with GSD
Scene_GSD	Numeric	4	00.1 – 99.9	O	Required minimum GSD in meters
Scene_Slant_Range	Numeric	5	000.0-999.9	O	Slant Rng to tgt in nmi with four-corner scene definition
Scene Length	Numeric	5	000.1 – 999.9	O	Ground distance of coverage along track direction in nautical miles with four-corner scene definition
Clockwise_Coord_1	Alphanumeric	15	Lat/Long	M	Scene Corner Coord 1 Pixel(0,0) DDMMSSHDDDMMSSH where D =Degree, M =Minute, S =Second, H =Hemisphere
Clockwise_Coord_2	Alphanumeric	15	Lat/Long	M	Scene Corner Coord 2 DDMMSSHDDDMMSSH where D = Degree, M =Minute, S =Second, H =Hemisphere
Clockwise_Coord_3	Alphanumeric	15	Lat/Long	M	Scene Corner Coord 3 DDMMSSHDDDMMSSH where D = Degree, M =Minute, S =Second, H =Hemisphere
Clockwise_Coord_4	Alphanumeric	15	Lat/Long	M	Scene Corner Coord 4 DDMMSSHDDDMMSSH where D = Degree, M =Minute, S =Second, H =Hemisphere
BE COUNT REC					(START)
BE_Count	Numeric	3	000-999	M	Number of BEs
BE COUNT REC					(END) (Start) Occurs BE_Count times
BE_Suffix	Alphanumeric	15		C	BE and Suffix
BE_Name	Alphanumeric	30		C	Target Description
BE_Lat/Long	Alphanumeric	15	Lat/Long	C	DDMMSSHDDDMMSSH where D =Degree, M =Minute, S = Second, H =Hemisphere
BE_Elevation	Alphanumeric	8	-99999.9 to +99999.9	C	Ground Elevation in feet MSL
BE_Priority	Numeric	3	000-999	C	Exploitation and/or Collection Priority
BE REC					(END)
SCENE REC					(END)

M: Mandatory - must be present in all messages (required for IESS Collection Plan Processing)

C: Conditional - will be present in all messages meeting defined conditions

O: Optional – may be present in a message (anything not Mandatory or Conditional)

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Positional Updates			
Data	**Format**	**UOM; Range**	**Description**
Aircraft Latitude	ddmmssh	0-90 degrees	
Aircraft Longitude	dddmmssh	0-180 degrees	
Aircraft Altitude	NNNNN	Ft above MSL	Range
Aircraft Grd Spd	NNN	KTS	Range
Aircraft true heading	Integer Degrees	0-359	
Mission Name	20 A/N		Expected Mission representation is PPYJJJN where PP=Project code, Y=year (units), JJJ=Julian day and N=Sortie Number
Time stamp	dddhhmm		

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Accomplishments			
Tag	**Name**	**Format**	**Description**
MN	Mission Name	20 A/N	Project Code: AA Year of Decade: N Day of Year: NNN Sortie: N
SN	Scene #	NNN	Range: 1-512
SM	Sensor Mode	NN	Range: 1 - 99
PN	Predicted NIIRS	N	Range: 0 – 7; not assigned for non imaging modes
II	Image ID	40 A/N	See IESS ICD for detailed internal structure. Format may not be correct if mission name deviates from format above.
##	Separator for repeating fields		Following lines are for an additional target covered by scene
TG	Target BE	10 A/N	Varies by agency assigning BE first 4 characters will be numeric WAC
SF	BE suffix or KAI	5 A/N	Set only if value available
TC	Target Coordinate	ddmmsshdddmmssh	
TT	Time on Target	dddhhmm	Time collected Zulu; day of year, hours, minutes
TF	Planned or Adhoc	1:00 AM	P: Planned A: Adhoc; P is assigned for scene planned before mission; A is assigned for scene planned during mission.
LL	Scene lower left corner	ddmmsshdddmmssh	
LR	Scene lower right corner	ddmmsshdddmmssh	
UR	Scene upper right corner	ddmmsshdddmmssh	
UL	Scene upper left corner	ddmmsshdddmmssh	
CP	Scene center point	ddmmssmdddmmssh	Assigned only for scenes with appropriate geometry

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Future '05 Method of Collaboration

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Collaboration Setup for Dynamic Mission Data

Mission Execution Data	Mission Commander(s)	Task Requestor - 1	Task Requestor - n	CAOC	DCGS 1	DCGS n
Mission Area	x	x	x		x	x
Current Nav Plan	x	x	x	x	x	x
Current AV Location	x	x	x	x	x	x
Pilots Intent	x	x	x	x	x	x
Action Points	x					
Comms Plan	x			x		
Dissemination Plan	x	x	x	x	x	x
Lost Comms Timer	x					
Remaining Battery Time	x					
NFZ's	x	x	x	x	x	x
Keep-in Zones	x			x		
Current Weather	x	x	x	x	x	x
Forecast Weather	x	x	x		x	x
Approaches	x					
Departure Routes	x					
Runway Structures	x					
Apriori Airborne Collection Reqt's Message	x	x	x	x	x	x
Dynamic ACRM	x	x	x	x	x	x
Collection Tie-Up	x	x	x	x	x	x
Onboard Threats	x			x		
Offboard Threats	x					
Detections/Tracks Performance Metrics	x					
Contingency Routes	x	x	x	x		
Collection Based Performance Metrics	x	x	x		x	x

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Dynamic Collaboration for Flight & Collection

Positional Updates	Mission Commander(s)	CAOC	DCGS 1	DCGS n
Aircraft Latitude	x	x	x	x
Aircraft Longitude	x	x	x	x
Aircraft Altitude	x	x	x	x
Aircraft Grd Spd	x	x	x	x
Aircraft true heading	x	x	x	x
Mission Name	x	x	x	x
Time Stamp	x	x	x	x

Common Collection Plan Message	Mission Commander(s)	CAOC	DCGS 1	DCGS n
Target Lat(s) & Lon(s)	x	x	x	x
Target Radius	x	x	x	x
BE	x	x	x	x
Priority	x			
Sensor Type & Mode	x	x	x	x
Est Time of Collection	x	x	x	x
Status	x	x	x	x
Comments	x	x	x	x
EEI's	x	x	x	x
Exploitation Status	x	x	x	x

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Dynamic Collaboration for Flight & Collection

Accomplishments	Mission Commander(s)	CAOC	DCGS 1	DCGS n
Mission Name	x	x	x	x
Scene #	x	x	x	x
Sensor Mode	x	x	x	x
Predicted NIIRS	x	x	x	x
Image ID	x	x	x	x
Separator for repeating fields	x	x	x	x
Target BE		x	x	x
BE suffix or KAI		x	x	x
Target Coordinate	x	x	x	x
Time on Target		x	x	x
Planned or Adhoc		x	x	x
Scene lower left corner		x	x	x
Scene lower right corner		x	x	x
Scene upper right corner		x	x	x
Scene upper left corner		x	x	x
Scene center point		x	x	x